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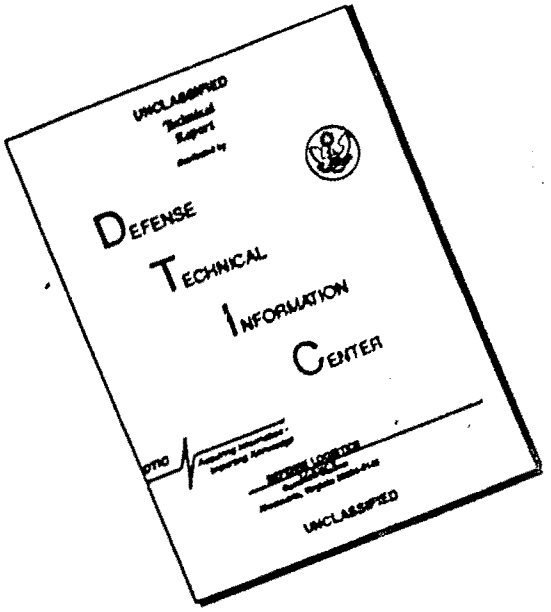

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IN REPLY REFER TO

AGAM-P (M) (5 May 69) FOR OT UT 691334 9 May 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 589th Engineer Battalion (Construction), Period Ending 31 January 1969

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Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 589TH ENGINEER BATTALION (CONST)
APO San Francisco 96321

EGACBF-CO 31 January 1969

SUBJECT: Operational Report of 589th Engineer Battalion (Construction), For Period Ending 31 January 1969, RCS CSFOR-65(R1)

THRU: Commanding Officer
35th Engineer Group (Const)
ATTN: EGA-3
APO 96312

Commanding General
18th Engineer Brigade
ATTN: AVBC-CB
APO 96377

Commanding General
United States Army, Vietnam
ATTN: AVHGO-DST
APO 96375

Commander in Chief
United States Army, Pacific
ATTN: GROP-DT
APO 96588

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SUBJECT: Operational Report of 589th Engineer Battalion (Construction) For Period Ending 31 January 1969, RCS CSFOR-65(R1)

1. SECTION 1, OPERATIONS: Significant Activities

a. Organization: The organizational structure of the 589th Engineer Battalion (Const) during the report period is found at inclosure 1.

b. Command and Staff Changes:

(1) The Battalion and four units of the battalion changed command during this reporting period. On 13 November 1968 1LT Roger D. Langford assumed command of Headquarters company from 1LT Bruce R. Fernandez. LTC Al Sx Rosin assumed command, on 15 November, of the Battalion from LTC Albert C. Costanzo, who was on emergency leave. Captain Thomas O'Dea assumed command of D Company on 21 December. On 7 January 1969 1 LT Anthony C. Muse Jr. took over command of the 51st Engineer Platoon (Asp) from 1LT Steven Schilson, who moved to construction officer of B Company. The command of the 513th Engineer Company (Dump Truck) was passed from 1LT David M. Swope to Captain Forrest P. Hanson on 28 January 1969.

(2) 1LT Kenneth P. Koppers was assigned as battalion adjutant on 4 November. 1LT Howard M. Baga was assigned as CPO on 20 November 1968. On 22 November 1968 Captain Forrest P. Hanson was assignod as assistant S-3. 1LT Bruce R. Fernandez assumed the duties as S-4 officer of the battalion on 1 December 1968. On 12 December Captain Thomas O'Dea assumed duties of S-3 officer on Major Ashley's departure. On 21 December 1968 Captain Joseph Feast Jr. assumed the duties of battalion S-3.

c. Headquarters and Headquarters Company(HHC):

(1) The utilities section of HHC was engaged in construction throughout the reporting period. This construction significantly improved the living conditions of the 589th Engr Bn area. The construction projects consisted of billets improvement, latrine and shower repairs, mess hall repairs and the construction of protective bunkers throughout the HHC area.

(2) This section has also supplied Charlie and Delta companies with water purification units and personnel to effectively operate them. This was accomplished by setting up water points at each company and supplying them with the necessities required to produce purified water. A total of 409,750 gallons were produced for the two companies.

(3) The main objective of the utilities section during the last month was to construct protective bunkers throughout the HHC area and to build two man fighting emplacements along the perimeter. Construction

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began during the last week of the reporting period to build revetments around all billets.

d. Company A:

(1) The primary mission of Co A during the reporting period was to support the line companies with specialized equipment and maintenance. The Equipment Platoon supported the S-4 section with its six 10 ton tractor-trailors and three 5 ton tractor-trailers throughout the reporting period. Their primary mission was to transport equipment and supplies from Cam Ranh Bay area. It also supported "B" Company with its eight 5 ton dump trucks on a day-to-day basis. The Equipment Platoon also provided specialized equipment for other units and organizations.

(2) On 21 November 1968 the Quarry Section received a 225 TPH Jaw Lock Crusher which consists of three Roll Crushers, one Scrubber and Washer and one Sand Dehydrator. The jaw crusher and one roll crusher replaced the existing 75 TPH crusher which is to be set up in Don Duong, RVN(location of Co D) to support paving operations. A 40 ton crane with shovel front was picked up on 12 January 1969 to supplement the existing 40 ton crane(w/o shovel front) and to support the 225 TPH loading operation. The 225 TPH primary and secondary crusher began crushing base course on 27 January 1969. The product will be stockpiled for future use on QL-11 West. During the reporting period, extensive quarry development techniques have been implemented with the technical assistance from a representative of Quinton Engineers. A bench was cut 30 feet below the top level of the quarry in order to systematically bring the quarry down to floor level. Also, a new haul road was cut into the quarry to permit two-way traffic to and from the crusher hopper. During the period of operation, 35,141 cubic yards of 2½"(-) base course were produced and 2,254 cuvic yards of 1½"(-) concrete rock were produced.

(3) The company maintenance section received an average of ten work orders per day during the three month period. Approximately six per day were received on engineer equipment and the rest were ordnance items. The maintenance platoon received a total of 345 work orders from 1 November and has completed action on all but 35 to date. Within a relatively short period of time (December-January) a total of 27 engineer and 26 ordnance end items were turned in by the maintenance platoon. This high rate of turn-in is due mainly to the tough operational demand imposed upon the equipment. From 1 November to 30 December 1968, 239 Redball 02 priority requests were received by the maintenance platoon supply section. Of these, 88 were filled and 33 cancelled. During the same period, 1087 requisitions of priority 05 were received, 536 were filled, and 7 were cancelled.

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(4) The major activities of the 51st Engineer Platoon (Asphalt) have been supplementing "A" Company with 5 ton tractor-trailers and 5 ton dump trucks, and performing maintenance on the asphalt plant which will be required in the near future.

(5) Enemy activity on the night of 25 January 1969 resulted in light damage to five pieces of equipment. One round of 60MM mortar ammunition landed in the company maintenance section motor pool and lightly damaged one shop contact truck, one 5 ton tractor, one trailer mounted welding machine and two 2½ ton cargo trucks. All damage consisted of fragmentation holes in body sheet metal, tires, and windshields. Five more rounds fell in a field directly behind the motor pool and one fell in the maintenance platoon motor pool causing no damage. No casualties were sustained.

c. Company B

(1) During the past three months B Company, 589th Engineer Battalion, stationed at Phan Rang, Republic of Vietnam, was involved in three large construction projects. These projects included: road upgrading and building of bridges on a 14.4 mile stretch of QL-11 between Phan Rang and the Tan My Bridge, coord BN 812788 to BN 618957, the upgrade of MACV facilities in Phu Quy Sub-sector, and road maintenance on a 75 mile stretch of QL-1 from coord BN 253412 to BN 893947.

(2) The upgrading of QL-11 has been hindered to some extent by equipment problems and inexperienced personnel. For example, all compaction equipment was deadlined at one time or another during the three month period. The 35 ton roller was periodically deadlined because of the non-availability of tires, hitches, and bearings. The 13 wheel roller and sheepsfoot roller were also deadlined for bearing at one time. Experienced personnel in the MOS's of 51H40 and 62N40 were scarce, and a shortage of unskilled personnel existed for the first two months of the reporting period.

(3) The work on QL-11 has consisted of widening, filling, ditching, cutting away and clearing 10 acres of growth along the sides of the road. One hundred fifty meters of culvert were used on three(3) bypasses, 70,000 cu yds of fill and 3,500 cu yds of rock were hauled and compacted. The earth moving platoon during this three month period was primarily concerned with widening and bringing existing segments of QL-11 up to grade. One section in particular, coord BN 694672 to BN 722852 was widened approximately 8 meters. This was an area of extremely soft material which required large amounts of blast rock and river run rock for stabilization.

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The operation of the first platoon during the reporting period, consisted primarily of the installation of culverts, construction of headwalls, and the construction of a concrete abutment, steel stringer bridge. The second platoon, while assembling corrugated steel culvert 36" and larger, found it difficult to join the sections because of distortion from transporting. This problem was solved by wrapping a chain around the sections and then, using a binder, pulled the sections together making quicker installation of the bolts. The operation was further speeded by clamping the sections together with vice grips, enabling the chain and binder to be moved to another section. The road was graded from coord 735844 to coord 723852. On bridge QL-11-16, 900 board feet of decking was replaced.

(4) The company hauled and graded 660 cu yds of fill in widening the shoulders of Highway 408 from coord BN 841831 to BN 842833. Fifty cu yds of fill were used on the road surface, which was then topped with 180 cu yds of base course.

(5) Company B also worked on the upgrading of MACV Advisor Facilities located at Phu Quy Sub-Sector, Coord BN 742745. The work included the building of an administration building, mess hall, latrine, BOQ/BEQ, water tower, breezeway, generator shelter, and a septic tank. The buildings were fitted with masonite walls, plywood ceilings, galvanized tin roofs, screen windows, electric wiring and lights, plumbing, insulation, and stripping. The mess hall was provided with room partitions, vents, counters, and one (1) air-conditioner. The BOQ/BEQ received two air conditioners.

(6) Cantonment area projects included the installation of a gate for the S-4 yard, dozer support for the 513th Engr Co (DT) and Company A Third Echelon Maintenance Shop, Battalion S-4 yard fence repair, painted movie screen in Company area, placed 40' of 18" culvert in A Company area, installed eight foot bridges, and constructed protective bunkers.

(7) The work on QL-1 consisted of making emergency road repairs and performing Engineer tasks at MACV Compound, Song Mao, coord BN 282450. Road maintenance consisted mainly of reshaping the shoulders where possible, and filling pot holes, The work at MACV Compound, Tuy Phong, coord BN 533415, included the grading of birddog airstrip, leveling a helicopter pad and reshaping 2 very badly pitted roads. The work at MACV Compound, Song Mao, consisted of leveling approximately 3 acres of land for future Vietnamese dependent housing, rebuilding 2 ammo storage berms, building for a new storage area, improving access road to an APC unit, improved and made safe for travel an access road to the central community water source.

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(8) The company was also involved in a Civic Action task to haul 6000 cubic yards of fill for the repair of an irrigation canal near Phan Rang. A total of 1842 cubic yards were hauled when the project was halted by enemy destruction of a bridge on the access route.

f. Company C

(1) During the period from 1 November 1969 thru 31 January 1969, Co C, 589th Engr Bn (Const) was engaged in the upgrading of QL-11 from coordinates BN 619957 to BN 599992, providing continuous maintenance of Route QL-11 from coordinates BN 619957 to BP 453084 (32 kilometers of roadway), completion of their base camp, and support to 5/27th Artillery unit in construction of a base camp area for two 155 mm howitzers and their gun crews.

(2) The company finished the construction of their base camp area with the following projects built in this reporting period: 2-tool room/prefab building (20'x30'); 1 maintenance shed (25'x56'); 1 latrine (8'x16'); 3-55 gal drum urinals; overhead electric power distribution; ½ acre extension to motor pool area; company drainage system; repair of fighting/protective bunkers; and 20 fighting emplacements. The company was given an additional mission of constructing billet revetments around each billet, which was 50% complete at the close of the report peridd.

(3) A continual maintenance effort kept QL-11 open to traffic. The maintenance consisted of filling pot holes from coordinates BP 480085 to BP 453084, clearing out culverts and ditches to improve drainage in the pass. (mountain rage between Don Duong and Song Pha), grading the existing road directly after each rain, rescuing many disabled U.S., ARVN, and civilian vehicles in the area, and repairing damage caused by enemy activity.

(4) Upgrading QL-11: The upgrading of QL-11 has been a combined effort of both the earth moving platoon and the two construction platoons. The rome plow cleared approximately 500 acres of woodland along both sides of the road 100 meters from the road centerline.

(5) A total of 86,000 CYS of fill was placed and compacted as part of the upgrading work. The construction platoon completed construction of 12 culverts totaling 330 meters. All culverts were backfilled, tamped, headwalled, and rip rapped on the upstream and downstream sides. Also completed was the extension of bridge 38.1 (BP 45860927), a reinforced concrete box culvert which eliminated one of the most dangerous curves on QL-11. Culvert bridge #18 (3 barrel 60" culvert) was 50% complete and #19 was 5 % complete at the close of the reporting period. Both construction platoons were engaged in a continual prefabbing task of headwalls for culverts that will be started in the future.

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(6) The 2nd Platoon, Co "C", 589th Engr Bn (Const) assisted in the construction of a fire support base for 5/27 Artillery. The Beneficial Occupancy Date was set at 6 February 1969. Augmentod by one D-7 dozer and a rome plow from the earth moving platoon, a 6 foot high berm was dozed around the entire area and 100 meters outside the berm was cleared. The platoon constructed two firing pads for 155 mm howitzers, two guard towers, and are presently constructing the Command Bunker (20'x40'), Ammo Bunker (10'x20'), latrine, shower, and one mess hall (Sea Hut 20'x60'). Technical assistance was also given to the 5/27th on the placement of their field fortifications.

g. Company D

(1) The bulk of the work was centered on road maintenance of QL-11 from Dalat to a point 7½ miles east of Don Duong and all of QL-21A from Don Duong to QL-20. The bulk of the work was reconditioning the road surface and drainage improvement. A problin developed on QL-11 when it was found that the fill used became slick and uncontrolable when wet, and the material had to be removed. The ditches on QL-11 proved to be easy work for graders, and the uso of local nationals to clean culverts solved most drainage problems. QL-21A required only a slight amount of ditching and pothole filling. Stable fill material was readily available along this route. This route was also being worked on by the Ministry of Public Works which is repairing the road surface in various spots.

(2) Co D also repaired a blown French Eiffel bridge at BP 299028 on QL-21A. The work consisted of replacing two blown spans and redecking the bridge. It was found that there are many variations of parts for the Eiffel type bridge and close attention to detail is required for its erection. The superstructure was reassembled on the site and launched with the aid of a D-7 dozer and a 20 ton crane. The bridge was then redecked and opened to traffic. The Eiffel parts were obtained from the MPW storage area in Dalat. Three other bridges along QL-21A were damaged by enemy action and temporary by passes wereconstructed to keep traffic flowing. The bulk of the support mission was performed at Pr'line Mt. Signal Site. Two perimeter roads were build, a total length the 2 miles. Culverts and ditches were added to prevent road erosion. A helipad at Pr'line Mountian was repaired by giving it a single surface treatment of MC-0. The pad had shown signs of deterioration fromccontinual use and poor drainage. Sealing the surface improved the drainage and alleviated somewhat the dust problem encountered at that location. Co D also began the first phases of an improved water system for Pr'line. A 10,500 gallon steel bolted tank was erected and connected to the existing systems for additional storage. A pump test was also run to check the reliability of the water source. A third project at Pr'line was the construction of a 25'x100' retaining wall. The wall was of timber construction and involved the use of a deadman anchoring system.

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(4) Two projects are now under construction in Dalat at Cam Ly Airfield. One involves repairing an area at the end of the runway which was sloughing away. An area, L shaped, 200 feet long, and 15 feet deep was excavated and refilled with new material and compacted. The other job involved building 4 POL tanks (3-500bbl, 1-3000bbl), a distribution line and access roads in the POL area. Site grading is the only work accomplished so far on the second job.

(5) Late in the period, the upgrade directive for QL-11 south was obtained. Work done during the period involved three small realignments for a total of 0.7 km. Two culverts were started in areas where it is possible to straighten the mountain road by a short realignment.

h. 51st Engineer Platoon (Asphalt): Since the asphalt plant was not in operation during the reporting period, the equipment and manpower of the 51st Engineer Platoon (Asp) was used to supplement the resources of Company A, to which the 51st is attached. In addition, three men have been on TDY to the 73rd Engineer Company (CS), during this reporting period.

i. 513th Engineer Company (Dump Truck): The 513th Engineer Company was attached to the 589th Engr Bn but under the operational control of other Engr Bns.

j. Engineer Equipment Maintenance Officer: The overall average deadline rate for battalion equipment was brought down from 8% to 6% during the course of the reporting period. The initial rise in deadline at the beginning of the period was due to the turn-in of ordnance ASL (Authorized Stockage List) parts. The resulting higher deadline rate (8%), was brought down when the battalion was given its own ordnance third echelon capability and authorization for ordnance ASL under TO&E 5-115G. By having both ordnance and engineer third echelon capability, much valuable time was saved by not having to go through the DSU (Direct Support Unit).

k. Personnel and Administration:

(1) During the reporting period, the assigned strength of the battalion went from approximately 95% in October to approximately 83% in December. However; with the assignment of personnel to the battalion in MOS's 11B10 and 12A10, plus assignment of personnel with authorized MOS's, the assigned strength was returned to 94% by the end of the reporting period. Personnel assigned with the MOS 11B10 were, insofar as possible assigned duties which paralleled their civilian occupation. Several had college degrees in subjects ranging from medical lab technicians to animal husbandry. The most critical shortage of the required Military Occupational Specialties exists in the series: 51H40, 62N40, 64B20, 76Y40 and 94B40. Other MOS's, although short at the present time, will be mostly filled after completion

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of the current OJT period for personnel assigned out of their FMOS.

(2) During the cited period, 44 personnel were recommended for awards by this headquarters; 2 for Valor, 2 for Achievement, 2 for the Purple Heart and 36 for Service.

(3) Two men were court-marshalled and convicted during the reporting period and 28 men received field grade Article 15's.

1. Intelligence and Security:

(1) Enemy activity directed against friendly forces in general, and the battalion in particular, was concentrated primarily along that portion of QL-11 between Phan Rang and Don Duong, with some incidents along QL-1 and QL-21A. This appears to arise from the obvious fact that there are more targets for the enemy due to the battalion's activities along QL-11, plus the fact that QL-11 is straddled by two enemy secret bases: one is located approximately 15 miles north of Phan Rang and the other 15 miles west.

(2) The nature of enemy activity during the reporting period ranged from sightings of suspicious activities to mortar and rocket attacks directed against friendly installations.

(a) On 13 November the railroad bridge near highway bridge 50 on QL-1, 15 miles south of Phan Rnag, was destroyed by enemy demolitions.

(b) During the night of 25 November, bridge 6 on QL-21A, which had been previously destroyed and repaired, was again demolished by the enemy. D/589th installed a culvert bypass at that location the next day.

(c) A ¼ ton truck belonging to B/589th, while traveling north on QL-1 on 26 November, was ambushed and destroyed by a command detonated Claymore mine near the Salt Flats area, with the loss of one Officer and one EM and one EM wounded. After evading the enemy at the scene of the incident, the wounded man was again fired upon, but was finally picked up by friendly Vietnamese civilians and taken to an ARVN compound. He was evacuated to Phan Thiet, where he was treated and later returned to his unit. A recovery party, led by the battalion commander, reached the scene on 27 November, without incident and returned to Phan Rang that same day.

(d) At 1400 hours on 29 November, a convoy consisting of two D/589th vehicles and a PF (Popular Forces) 2½ ton truck with security troops were ingaged in an exchange of small arms fire at bridge 6 on highway QL-21A with no damages or casualties incurred. 2/C/231 (ARVN) artillery fired ten rounds in support of the convoy, however enemy casualties are unknown.

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(e) Regional Force (RF) units, beyween 1700 and 1800 hours, on 3 December, discovered a 2½ ton vehicle, belonging to C/589th, burning near bridge 9 on highway QL-11. The truck was carrying propane tanks for the C Company mess hall and was returning to that location from Phan Rang, when ambushed by the enemy. Small arms fire caused the propane taks to explode, destroying the vehicle. One EM was killed and one was wounded. The vehicle was recoved the following day without incident.

(f) A charge placed in a small culvert at BP 476105 during the night of 4 December destroyed the culvert and blocked QL-11 until C/589th repaired the culvert and opened the road the following day.

(g) While working on QL-11 between bridges 16 and 17, elements of C/589th, at 1515 hours on 13 December, received 5-10 rounds of small arms fire. RF security forces present at the time returned fire, with unknown results to the enemy.

(h) On 16 December, a work party from D/589th, while returning to base camp from their job site on QL-21A at 1600 hours, observed abnormal activity on the part of Vietnamese civilians near the hamlet of Lac Binh. The people appeared to be unusually sullen and withdrawn, and there was evidence of barricading around some homes. MACV, Don Duong, were notified and in turn dispatched a PF patrol which made contact with an estimated company size Viet Cong unit at 1610 hours. A later report disseminated by MACV indicated that Viet Cong elements had entered the village and assasinated a Vietnamese security official. A reactionary force entered the village at 1915 hours and contacted a Viet Cong platoon. 2/C/231 (ARVN) Artillery located at Don Duong, expended 20 HE rounds in support, with unknown results.

(i) The lead vehicle of a five vehicle convoy from C/589th, while travelling about 6 miles east of Song Pha on QL-11 on 18 December, was struck at 0815 hours by a command detonated mine. A sweep of the area revealed that the mine had been detonated from a location approximately 75 feet from the northeast side of the road, and additionally, a Claymore mine was discovered in the shoulder of the road 20 meters southeast of the above location. The vehicle involved was only slightly damaged and driver suffered minor scratches.

(j) A 2½ ton vehicle belonging to a MACV unit at Dalat was struck by a B-40 rocket near bridge 9 on highway QL-11 resulting in the destruction of the truck and three US deaths.

(k) QL-11118 (bypass) culvert was blown during the night of 21 December. The roadway was not damaged and remained passable to traffic.

(l) On 23 December elements of B/589th found three VC hand grenades and one B-40 rocket 100 meters west of bridge QL-11-9. This incident was reported to EOD personnel, who disposed of the items.

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(m) While proceeding to the job site on 23 December elements of C/589th received small arms fire near bridge QL-11-19. Fire was returned and no damages were inflicted by the enemy.

(n) A Viet Cong sapper team blew a combination railroad-highway bridge on highway 408, one km south of Thap Cham during the early hours of 28 December. One pier was extensively damaged and a 15'x50' portion of decking and rail was destroyed. The bridge is presently passable only for motorcycle-type vehicles.

(o) Guard elements of D/589th observed two figures running away after a trip flare was detonated on the company perimeter the night of 29 December. A sweep of the area the following morning produced negative results.

(p) On 30 December an element of B/589th received five rounds of small arms fire one km west of bridge QL-11-5. No damage was inflicted.

(q) While working on an area approximately 500 meters west of bridge QL-11-17 on 4 January, a C/589th D-7E tractor uncovered an antipersonnel mine. The mine was detonated by rifle fire, with no injuries resulting to US personnel, and fragments were turned into MACV for identification.

(r) Again, on 7 January, elements of C/589th found a mine while working west of bridge QL-11-19. EOD personnel from Phan Rang AFB were notified and the mine proved to be a US anti-personnel mine.

(s) On 7 January, RF security forces assigned to a C/589th work party located one mile west of bridge QL-11-16 received small arms and automatic weapons fire. They returned fire, and no injuries were suffered.

(t) At 0115 hours on 13 January C Company at Song Pha underwent the first mortar attack directed against elements of the battalion. The base camp at that location was hit with seven mortar rounds, resulting in two US WIA (Wounded In Action) and one KIA (Killed In Action). One storage building was damaged, in addition to five vehicles which suffered minor damage.

(u) PF (Popular Forces) unit received two B-40 rockets while in their night defensive position one mile south of Don Duong on 15 January, with no casualties.

(v) Guard elements of D/589th again sighted two persons near the company perimeter when flares were set off during the night of 15 January. They received five rounds of small arms fire, with no casualties. Fire was returned and ARVN artillery at that location fired illumination rounds.

(w) Culvert bypass QL-11-22 was destroyed by Viet Cong elements on 16 January. C/589th repaired the culvert and reopened the road on 17 January.

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(x) A charge placed in an 18" culvert at BP 469099 during the night of 25 January damaged 30' of the culvert which was repaired the following day.

(y) Phan Rang Air Base came under mortar attack at approximately 0210 hours 26 January 1969. During this period one 60 mm mortar round landed in the A/589th motor pool causing slight damage to equipment.

(3) In summary, there was a perceptible increase in enemy activity during the reporting period, as compared to the previous period. Ambushes along LOC's which resulted in significant losses resulted from failures to abide by established vehicle movement procedures. While the level of enemy activity within the battalion area of responsibility remains relatively low and no concentrated buildup of his forces is presently indicated, he still retains the ability to conduct standoff attacks, ambushes and demolition incidents almost at will. The destruction of the bridge at Thap Cham resulted in a curtailment of battalion support to a civic action project in that area, but no other action was so significant as to curtail engineering operation.

m. Logistics:

(1) The main activities of the S-4 section during the past three months has involved implementation of the new series (M)TO&E and transportation of materials and equipment in addition to routine support of the Battalion Lobistically.

(2) The new series (M)TO&E were received on 20 November 1968 as well as MTO&E for the 51st Asphalt Platoon and the 513th Engineer Company (Dump Truck). Comparison of TO&E's revealed numerous changes affecting all units and immediately procedures were initiated to requisition added items, cancel requisitions for items no longer authorized, reconcile outstanding requisitions and review those deleted items for which there exists a continuing requirement due to local conditions.

(3) The new series MTO&E fails to provide sufficient quantities of the following:

(a) M60 Machine Gun-Authorized - 0. Required - 28. Six six for each line company, six for the equipment maintenance company, and four for the Headquarters and Headquarters Company. The M60 machine gun is vital to the effective defense of isolated base camps and dispersed work parties operationg in a combat environment. More often that not, the engineers must depend solely upon their organic manpower and equipment to protect themselves in hostile areas. Response to guerilla tactics must be swift and impressive if it is to be effective in preservation of life and accomplishment of the mission. Vehicles which must travel in enemy territory due to mission, logistical and administrative requirements

must be able to lay down a rate of instantaneous fire power commensuate with that which can be expected from the enemy. It would be unwise to venture out with a lesser capability.

(b) Radio Set: AN/VRC-12 Series - Authorized - 25. Required - 30. One extra in each line company headquarters, one to the Bn S-4 and 1 each Bn XO.

AN/GRC - 125 - Authorized - 0. Required - 12.

Each company normally has to monitor three stations simultaneously, i.e., battalion headquarters, company net, and the local MACV net. The AN/VRC-47 takes care of two of these requirements and an additional AN/VRC-46 would take care of the third. The MACV net provides the latest information of local enemy activity and "DUST-OFF" and helicopter gunship support.

There exists the everyday need for the battalion S-4 and subordinate units to communicate due to high supply usage rate and wide unit dispersal. Tight coordination requires frequent, detailed discourses, which often lose their meaning and intent when relays. This causes delays until messages are straighntened out and the required action executed. These situations could be preluded if the S-4 were able to communicate directly with the units.

The battalion XO acts in the CO's absence. He should have a like communication capability (AN/VRC-46 only).

A total of 12 (4 ea/line company) AN/GRC-125 are needed for tighter control within the line companies. There is a need for platoon sergeants to communicate with their platoon leaders because of dispersion due to squad sized jobs. The construction officer should also have a radio since he controls all construction within the company, which is often being accomplished in different areas simultaneously.

(c) Generator, 100kw - Authorized - 2. Required - 9 (2ea quarry, 3 ea Bn base camp of 3 units, 2 ea to the two isolated line companies).

A company size base camp located in an isolated location must provide its own power. Internal lighting, maintenance machine areas, mess hall, water supply and perimeter lighting require approximately 70 kw. This requirement is very dependably satisfied with one 100 kw generator (one additional back-up generator will be placed on stand-by). Colocated companies can be fed from a central bank of generators which will result in more efficient operations and reduce the overall generator requirement. Power for the rock quarry is provided by one 100 kw generator, which also provides power for protective lighting around the quarry.

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(4) Rotation of trained supply technicians posed serious problems. Replacement inputs had little or no knowledge of the commodities procedures or administrative responsibilities. Presently two supply sergeants are assigned within the battalion. Unit supply personnel are on-the-job trainees receiving little supervision except for occasional visits from the Battalion. One trained supply sergeant was lost as a result of enemy action and one medically evacuated due to a vehicle accident. Clerical personnel are limited and have no experience in the technical field. They require 60-90 days accelerated on-the-job training for indoctrination of operations, accounting and issue procedures and processing material for technical inspections and turn-ins. The lack of trained supply handlers, who are familiar with loading, unloading and storage and who possess knowledge of proper equipment to be used in the operation are non-existant. Constant supervision and training were needed to insure protection of supplies and equipment from damage due to improper handling and shipment.

(5) A continuing problem has been the receipt of supplies and material within established time frames. The time frames are set based upon normal order-and-ship times and mission requirements. Oftentimes target dates could not be met due to nonavailability or vital engineer equipment and supplies which have been properly requisitioned. When status cards were received from the inventory control center(ICC) releasing the item, follow-up to the depot would result in "Item Cannot be Located, Resubmit Your Requirements". ICC would sometimes cancel an item and the follow-up identifier would indicate that a letter of explanation was forthcoming. When no letter arrived within ten days, the item would be re-requisitioned and would not subsequently be cancelled. This occurred frequently. It took approximately 30 days to obtain an item of equipment which was released by ICC and physically located in the supply depot.

(6) Highway transportation support has improved, however, rail support has not been available as forecasted(probably due to enemy damage to tracks and railroad bridges). Water shipment remains inconsistent due to higher priority missions and limited vessels. Thus, the battalion has been required to divert organic equipment to a transportation mission which has created additional maintenance problems and posed additional problems in moving engineer equipment to and from the job site.

(7) The object of this discourse has been to present a "Grass-Roots" view or the logistical picture; to present facts and cite instances which might provide clues to spotting flaws in the system. No TOE can be written to satisfy all requirements generated by changing conditions. The nomadic nature of the engineers, specific mission, location, enemy situation and weather all affect the accomplishment of the mission. The degree to which mission accomplishment is affected is dependent upon whether the right tool or right item of Equipment is on hand for the right job. Engineer Construction Battalions are being tasked to provide work of a sophistication and nature not envisaged by the TOE, and the system is not

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responsive enough to satisfy a valid demand for non-TOE item in the time frame required. A field commander should be allowed to compare his TOE against his mission, order that non-TOE equipment vital to expeditious job accomplishment and expect the equipment to arrive within a reasonable time frame thereafter. This would entail building a theater float of certain selected items of tools and equipment and increased quantities of "expected expanded use" item, i.e., radios, weapons, etc. More maintenance people and greater repair parts would also be required. The equipment would be returned to float as soon as the job was completed or when the conditions which justified their acquisition cease to exist.

n. Operations and Training:

A noticeable increase of enemy activity within the Battalion area of responsibility was experienced during the report period. This caused an increase in our security force with a corresponding decrease in manhour capability. Capability was further decreased by having to leave the job site earlier for security reasons and getting to the site later due to road clearing operations. Bunkers were reinforced, additional sandbags placed, revetments strengthened and perimeter lighting was increased. Effort was expended mainly on road maintenance and road upgrade. One steel stringer, reinforced concrete abutment bridge was completed during the period and operational support jobs required equal amounts of horizontal and vertical work.

Replacement training was administered to 301 personnel during the period.

o. Battalion Aid Station:

(1) The battalion aid station is colocated at Phan Rang Air Force Base with HHC, Co A and Co B. In January, the medical section assumed responsibility for the operation of a dispensary, small laboratory, and a twelve patient holding facility which had previously been operated in conjunction with the 2/568 Medical Company (Clearing) which moved to Cam Ranh Bay. The medical section has maintained full TO&E personnel strength, however, four of the company aidman slots have been filled by OJT people. With the present facilities and equipment, the medical section provided the battalion with a much higher level of primary medical support than would have been pollible with the authorized TO&E. Other units in the area also utilized the laboratory and pharmacy.

(2) Outpatient visits totaled 1375 for the report period. The bulk of diseases seen among U.S. troops were common respiratory diseases, venereal disease(mainly gonorrhea), dermatological diseases, and minor injries. The section provides sanitation inspections of mess halls, latrines, showers, snack bars, water points, and living quarters on a bimonthly basis. Immunizations for battalion personnel were updated on a monthly basis.

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(3) The aid station treated an average of five Vietnamese nationals per day. These people were locally employed by the battalion or adjacent units. Except for the month of January, an average of fifty Vietnamese were treated per week through MEDCAP programs in conjunction with MACV.

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2. Section 2 Lessons Learned: Commander's Observations, Evaluations and Recommendations.

a. Personnel

(1) Shortage of Construction Supervisors.

(a) Observation: There exists an acute shortage of qualified construction supervisors (MOS 51H40) in the battalion.

(b) Evaluation: The battalion is authorized 32 construction supervisors. Twelve are currently assigned. This shortage necessitated the use of specialists and other personnel lacking the training and the experience required to perform effective supervision. This required an increased effort on the part of the available supervisors to monitor more than one project. In addition, the trend of the battalion projects is toward small projects at isolated locations, hence, more qualified supervisors are required to monitor these projects on a daily basis to consistently produce quality work.

(c) Recommendation: Command emphasis should be placed on the acquisition of trained construction supervisory personnel or present resources should be redistributed to ease localized shortages and preclude rotational humps.

b. Operations

(1) Compaction Equipment

(a) Observation; Economical and efficient fill compaction was greatly hampered by nonavailability of prime movers.

(b) Evaluation: Towed compaction equipment is adequate when prime movers are available, however, heavy transportation demands on this battalion have required full utilization of bobtail equipment. This leaves little flexibility for immediate replacement of deadlined prime movers for compaction equipment.

(c) Recommendation: That more self propelled compaction equipment be provided to construction engineer battalions.

c. Training

(1) Lack of Proper Emphasis on First and Second Echelon Repair of Diesel Fuel Systems.

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(a) Observation: Millions of dollars are spent by the government to provide the Army with the best equipment in the world but not enough time is spent in the classroom on proper maintenance of the Diesel fuel systems.

(b) Evaluation: Many operators and mechanics do not know how to trouble shoot diesel systems, what the proper cleaning agents to be used are, and how to service air intake, electrical, and lubrication systems. Many new engines are being deadlined after four to six weeks of operation because of inadequate training.

(c) Recommendation: That proper steps be taken to insure that operators and mechanics are taught trouble shooting techniques and the do's and don'ts of caring for diesel systems.

d. Intelligence: None

e. Logistics

(1) Bumper Height on the M123A1C 10 ton tractor.

(a) Observation: The bumper height on this tractor is such that it is conducive to the bending of tow bars and tends to cause and receive greater damage when involved in collisions.

(b) Evaluation: In comparison with the 5 ton tractor, the 10 ton is 10" higher in all respects. Since both bumpers are only 10" wide, in a head-on impact the bumpers would not make contact with each other. The 5 ton bumper would first make contact with that area above the 5 ton bumper. This causes damages which should be preventable through the use of an adequate bumper. In one instance $7000 damage was done to a 10 ton which might have been as low as a few hundred dollars, had the 10 ton bumper been the first area to make contact. Again, in comparison to the 5 ton tractor, the towing eye is located 10" higher on the 10 ton than the 5 ton. This does not allow for the tow bars of a wrecker to tow a 10 ton freely on any terrain other than flat terrain. The bars make contact with the bumper and are bent or they damage the eyes. Several sets of tow bars have been permanently damaged due to towing a 10 ton tractor over unpaved roads.

(c) Recommendation: In the first case, the bumper of the 10 ton tractor should be made to coincide with that of other Army motor vehicles. This can be done by applying an MWO to the existing bumper. The MWO would consist of a second bumper positioned beneath the present one and attached to the original bumper. Also needed is cross bracing to the frame to secure the second bumper in place and allow this bumper to absorb the impact and transmit

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it through the frame of the truck. In the second case the towing eye should be relocated in a position which is compatable with the towing bars of the wrecker. This condition could be met by placing the towing eyes on the underside of the existing bumper, This would make the location of the towing eye 42" from the ground level which is the same as that of the 5 ton tractor.

(2) Structural Failure of 10 Ton Tractor M123A1C

(a) Observation - The 10 ton tractor, under load, has frequently veered off the road due to a structural failure in the steering system.

(b) Evaluation - The tractor has been repeatedly deadlined for cross members which cracked near the truck frame both at the front end and beneath the fifth wheel, cracked trunion support brackets and cracked steering arms. Three of the trucks deadlined for steering problems have been satisfactorily repaired by support maintenance personnel. Trucks deadlined for cracked frames and dracked cross members have been repaired according to instructions provided by Army technical assistance representatives. These are now under observation with regard to durability.

(c) Recommendation - That a special study be made of the 10 ton tractor at the depot maintenance level to determine the cause(s) of the above defects and is ue MWO's to correct deficiencies.

f. Organization: None

g. Other: None

1 Incl
1. Organizational Structure

A. C. ROSIN
LTC, CE
Commanding

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EGA-CO (31 Jan 69) 1st Ind
SUBJECT: Operational Report of 589th Engineer Battalion (Construction), For Period Ending 31 January 1969, RCS CSFOR-65 (R1)

DA, Headquarters, 35th Engineer Group (Const), APO 96312, 21 February 1969

TO: Commanding General, 18th Engineer Brigade, APO 96377

1. This headquarters has reviewed the Operational Report-Lessons Learned for the 589th Engineer Battalion (Const) for the quarterly period ending 31 January 1969. The report is an excellent summary of the battalion's activities for the reporting period.

2. This headquarters concurs with the remarks of the battalion Commander.

William L. Barnes
WILLIAM L. BARNES
Colonel, CE
Commanding

AVBC-BC (31 Jan 69) 2nd Ind
SUBJECT: Operational Report of the 589th Engineer Battalion (Const) for the Period Ending 31 January 1969, RCS CSFOR - 65 (R1)

DA, Headquarters, 18th Engineer Brigade, APO 96377 11 MAR 1969

TO: Commanding General, U.S. Army Vietnam, ATTN: AVHGC-DST, APO 96375

1. This headquarters has reviewed the Operational Report - Lessons Learned for the 589th Engineer Battalion (Const) as indorsed by the 35th Engineer Group (Const). The report is considered to be an excellent account of the Battalion's activities for the reporting period.

2. This headquarters concurs with the observations and recommendations of the Battalion and Group Commanders, with the following comment added:

Reference: Section 2 paragraph b(1). A number of self-propelled rollers are arriving this spring as part of the MCA equipment buy.

JOHN H. ELDER, JR.
Colonel, CE
Commanding

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AVHGC-DST (31 Jan 69) 3d Ind
SUBJECT: Operational Report of 589th Engineer Battalion (Construction), For Period Ending 31 January 1969, RCS CSFOR-65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 1 APR 1969

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1969 from Headquarters, 589th Engineer Battalion (Construction).

2. Comments follow:

a. Reference item concerning shortage of construction supervisors, page 17, paragraph 2a(1); concur. MOS 51H40 is a critical MOS shortage in USARV. The 18th Engineer Brigade currently has an assigned strength of 37.8 percent compared to 30.4 percent in the 20th Engineer Brigade, the only other USARV unit having a large authorization in this MOS.

b. Reference item concerning bumper height on the M123A1C 10 ton tractor, page 18, paragraph 2e(1); concur in part. Relocating the towing eyes on the underside of the 10 ton tractor bumper has merit, and the unit should submit Equipment Improvement Recommendations (EIR's). The installation of a second bumper on 10 ton tractors to reduce damage resulting from head-on collisions is not feasible. Bumper heights of military vehicles are determined by ground clearance and angle of approach specifications.

c. Reference item concerning structural failure of 10 ton tractor, M123A1C, page 19, paragraph 2e(2); concur. A special study of all 10 ton tractor, M123A1C failures is currently being conducted in RVN. A special 10 ton tractor team has been in-country since September 1968 conducting field evaluations of all problems encountered. Units will continue to submit Equipment Improvement Recommendations (EIR's) for each failure observed.

FOR THE COMMANDER:

W. C. ARNTZ
CPT, AGC
Assistant Adjutant General

Cy furn:
589th Engr Bn
18th Engr Bde

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GPOP-DT (31 Jan 69) 4th Ind
SUBJECT: Operational Report of HQ, 589th Engr Bn (Const) for Period Ending 31 January 1969, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 16 APR 1969

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

C.L. SHORTT
CPT, AGC
Asst AG

EGACBF-CO 31 January 1969
SUBJECT: Operational Report of 589th Engineer Battalion (Construction) For Period Ending 31 January 1969, RCS CSFOR-65(R1)

ORGANIZATION

1. The following organic and attached units comprised the 589th Engineer Battalion (Construction) under TOE 5-115G during the report period.

a. Headquarters and Headquarters Company

b. Company A

c. Company B

d. Company C

e. Company D

f. 513th Engineer Company (Dump Truck) (TOE 5-124G)

g. 51st Engineer Platoon(Asphalt) (TOE 5-114D)

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CO, 589th Engineer Battalion (Const)

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